

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

REC'D 27 OCT 2005

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| Applicant's or agent's file reference<br>103714PCT   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |  |
| International application No.<br>PCT/EP 03/14250   | International filing date (day/month/year)<br>15.12.2003  | Priority date (day/month/year)<br>07.08.2003 |
| International Patent Classification (IPC) or both national classification and IPC<br>B65D41/34 |   |  |
| Applicant<br>SACMI-COOPERATIVA MECCANICI IMOLA ... et al.                                      |   |  |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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|---|---|
| Date of submission of the demand<br><br>01.03.2005  | Date of completion of this report<br><br>26.10.2005   |
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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/14250**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-16 as originally filed

**Claims, Numbers**

1-68 received on 23.05.2005 with letter of 19.05.2005

**Drawings, Sheets**

1/11-11/11 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
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International application No. **PCT/EP 03/14250**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.  
☐ paid additional fees.  
☐ paid additional fees under protest.  
☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.  
☐ not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.  
☒ the parts relating to claims Nos. 1-11 .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims |      |
|                               | No: Claims  | 1-11 |
| Inventive step (IS)           | Yes: Claims |      |
|                               | No: Claims  | 1-11 |
| Industrial applicability (IA) | Yes: Claims |      |
|                               | No: Claims  | 1-11 |

2. Citations and explanations

**see separate sheet**

**Re Item IV**

**Lack of unity of invention**

1. This Authority considers that there are 3 inventions covered by the claims indicated as follows:
  - i) **Claims: 1—11**  
Closure cap with opening-indicator means comprising fin means having an appendage means either flexible or extending transversally in relation with said fin means.
  - ii) **Claims: 21—27 and 37—51**  
Closure cap with opening-indicator means comprising fin means having three portions interacting with three collar means extending radially from the neck of a container.
  - iii) **Claims: 12—20, 28—36 and 52—68**  
Closure cap with threaded means provided with double starts staggered by an angle of 180° and a pitch of 4.5 mm.
2. The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:
  - 2.1 The document US-A-4 546 892 (mentioned in the description, page 2) is considered as representing the closest prior art. This document describes all the features of the subject matter of the independent claim 1. Furthermore, the features of independent claim 3 are known from US-A-2001/0002661.
  - 2.2 The special technical features (i.e. those features that define a contribution that the claimed invention considered as a whole makes over the prior art) of the first invention relate to the geometry of the fin means having a thickness that is less than the difference between the diameter (D) of projection means (21) and the diameter (d) of the neck and also a height that is less than the distance between the projection means (21) and a shaped part extending radially from said neck.
  - 2.3 The special technical features of the second invention, i.e. claims 21-27 and 37-51, relate to three portions on the fin means interacting with three surfaces of collar

means extending from the neck of a container. It prevents the fins from rotating around a deformable zone eliminating the danger that the bridge elements are not broken during opening of the container.

- 2.4 The special technical features of the third invention, i.e. claims 12-20, 28-36 and 52-68 relate to the threaded means of the cap in order to prevent a product from leaving the container before breaking the bridge elements of the opening indicator means.

It is obvious for the skilled person that the features of the first invention are so different from the features of the second, respectively the third invention, that no technical relationship, based on these features, can be found between these inventions.

Even when considering the problems to be solved by the features of the different inventions, no technical relationship between those problems exist.

The same comments apply to the second invention when compared with the third one.

- 2.5 Thus, the different groups of inventions are not so linked as to form a single general inventive concept. The application therefore lacks unity of invention as required by Article 17(3)a and Rule 13 of the PCT.

3. The applicant has had a search report drawn up for the first and second inventions - i.e. the inventions mentioned in claims 1-11, 21-27 and 37-51. With letter dated 25.07.2005 the applicant further indicated that the invention relating to claims 1-11 should form the basis for the INTERNATIONAL PRELIMINARY EXAMINATION.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document/s/:

D1: WO 03/016161 A (HABERSAAT PATRICK ;BOSL UDO (DE); METAL BOX PLC (GB); CROWN CORK &) 27 February 2003 (2003-02-27)  
D2: EP-A-0 541 466 (ASTRA PLASTIQUE) 12 May 1993 (1993-05-12)  
D3: WO 02/14170 A (OEZTUERK GUENAY) 21 February 2002 (2002-02-21)  
D4: US 2001/002661 A1 (REIDENBACH BRYAN L) 7 June 2001 (2001-06-07)

2. The present application does not satisfy the criterion set forth in Article 33(2) PCT because the subject-matter of Claim 1 is not new in respect of prior art as defined in the regulations (Rule 64(1)-(3) PCT).

2.1 Document D1, which is considered to represent the most relevant state of the art, discloses (cf. Fig. 10) a cap means, comprising opening-indicator means 340 having an outer edge wherefrom fin means leads away and extends in use internally of said cap means 335, said fin means comprising in one portion closer to said edge an elongated element 385b oscillatable around said edge, having a wedge-like longitudinal section and extending substantially rectilinearly from said opening-indicator means 340, said fin means further comprising in one end portion further away from said edge flexible appendage means 395.

Consequently, the subject matter of claim 1 is completely covered by D1, - Art. 33(2) PCT.

2.2 Also each of D2, D3 and D4 discloses all the features of claim 1.

2.3 The feature of dependent claim 2 is also covered by D1, as the appendage means 395 shown in Fig. 10 of D1 will certainly also be flexible enough to be mobile between a folded configuration and an extended configuration as defined by claim 2 of the present application. Thus, the feature of dependent claim 2 is also completely covered by D1, - Art. 33(2) PCT.

3. Furthermore, D4 discloses (cf. Fig. 2 and 3) cap means 2, comprising opening-indicator means 20 having an outer edge 34 wherefrom leads away fin means 52 which in use extends towards the inside of said cap means 2, said fin means 52 comprising, in one of its portions nearest said edge 34, an elongated element 36 having a substantially rectilinear extension, whereby said fin means further

comprises, in one of its portions further away from said edge 34, appendage means 40 extending transversely in relation to said elongated element 36.

Consequently, the subject matter of claim 3 is completely covered by D4, - Art. 33(2) PCT.

3.1 D2 also discloses all the features of independent claim 3.

3.2 D2 further discloses the features of dependent claims 4, 5 and 7-11, and D4 further discloses the features of dependent claims 6-11.

Thus, all the dependent claims 4-11 lacks novelty within the meaning of Art. 33(2) PCT.

4. To meet the requirements of Rule 6.3(b) PCT the independent claim should have been properly cast in the two part form, with those features which in combination are part of the prior art being placed in the preamble.
5. The content of the application has not been restricted to the first invention.
7. The application contains 2 independent claims for an apparatus (claims 1 and 3). This is allowable only when it is not appropriate having regard to the subject matter, to cover this subject matter by a single independent claim. In the present case, claims 1 and 3 are of overlapping scope, whereby the claims as a whole are not clear and concise, so that the requirements of Article 6 PCT are not met.

# CLAIMS

1. Cap means, comprising opening-indicator means (5) having an outer edge (11) wherefrom fin means (10) leads away and extends in use internally of said cap means (1), said fin means (10) comprising in one portion closer to said edge (11) an elongated element (14) oscillatable around said edge (11), having a wedge-like longitudinal section and extending substantially rectilinearly from said opening-indicator means (5), said fin means (10) further comprising in one end portion further away from said edge (11) flexible appendage means (18).
2. Cap means according to claim 1, wherein said appendage means (18) is mobile between a folded configuration (X), in which said appendage means (18) is contained in the thickness of said elongated element (14), and an extended configuration (Y), in which said appendage means (18) extends substantially transversely in relation to said elongated element (14).
3. Cap means, comprising opening-indicator means (5) having an outer edge (11) wherefrom leads away fin means (10) which in use extends towards the inside of said cap means (1), said fin means (10) comprising, in one of its portions nearest said edge (11), an elongated element (14) having a substantially rectilinear extension, characterised in that said fin means (10) further comprises, in one of its portions further away from said edge (11), appendage means (38) extending transversely in relation to said elongated element (14).
4. Cap means according to claim 3, wherein said appendage means (38) extends substantially perpendicularly in relation to said elongated element (14).
5. Cap means according to any one of the preceding claims, wherein said appendage means (18; 38) can be deformed if subjected to stress directed radially from a central zone



of said cap means (1) towards a peripheral zone of said cap means (1).

6. Cap means according to any one of the preceding claims, wherein said appendage means (18; 38) leads away from a second end (16) of said elongated element opposite a first end (15) thereof that comprises a deformable zone (12) acting as plastic hinge to connect said elongated element (14) to said opening-indicator means (5).

7. Cap means according to any one of the preceding claims, wherein said fin means (10) is suitable for interacting with projection means (21) obtained on a neck (8) of container means (9) with which said cap means (1) can be associated, during a first opening of said container means (9).

8. Cap means according to claim 7, wherein said fin means (10) has a thickness that is less than the difference between the diameter (D) of said projection means (21) and the diameter (d) of said neck (8).

9. Cap means according to claim 7, or 8, wherein said fin means (10) is of a height (h; h1) that is less than the distance between said projection means (21) and a shaped part (35; 44) of said container means (9) extending radially from said neck (8).

10. Cap means according to any one of claims 7 to 9, wherein said elongated element (14) is substantially subjected to compression stress, during said first opening.

11. Cap means according to any one of claims 7 to 10, wherein said appendage means (18) is shaped in such a way as to interact in a shapingly coupled manner with said projection means (21), during said first opening, to prevent said fin means (10) from rotating around said opening-indicator means (5).

12. Cap means according to any one of the preceding claims, wherein said opening-indicator means comprises a ring (5)

having an intended separation line means extending longitudinally along the surface of said ring (5).

13. Cap means according to any one of the preceding claims, and further comprising threaded means (6) suitable for engaging in corresponding further threaded means (7) obtained in container means (9) with which said cap means (1) can be associated.

14. Cap means according to claim 13, wherein said threaded means comprises a thread (6) provided with double start (30, 31).

15. Cap means according to claim 14, wherein said double starts (30, 31) are contained on the same plane that is substantially parallel to a further plane identified by an opening (32) of said cap means (1).

16. Cap means according to claim 14, or 15, wherein said double starts (30, 31) are mutually staggered by an angle of 180°.

17. Cap means according to any one of claims 14 to 16, wherein said thread (6) comprises a pair of threads (28, 29) with cylindrical helix extending parallel to one another.

18. Cap means according to claim 17, wherein said cylindrical helix has a pitch of 4.5 millimetres.

19. Cap means according to any one of claims 14 to 16, wherein said thread (6) comprises a pair of threads (28, 29) with tapered helix extending parallel to one another.

20. Cap means according to claim 19, wherein said tapered helix has a pitch of 4.5 millimetres.

21. Cap means, comprising opening-indicator means (5) having an outer edge (11) wherefrom leads away fin means (10) which in use extends towards the inside of said cap means (1), characterised in that said fin means (10) comprises a first portion (26) suitable for interacting with a surface (25) of first collar means (22) extending radially from a neck (8) of container means (9), a second portion (33)

suitable for interacting with a further surface (27) of second collar means (23) extending radially from said neck (8), and a third portion (39) suitable for interacting with a yet further surface (40) of said first collar means (22).

22. Cap means according to claim 21, wherein said first portion (26) is arranged transversely in relation to said second portion (33) and to said third portion (39).

23. Cap means according to claim 21, or 22, wherein said first portion (26) is arranged substantially perpendicularly in relation to said second portion (33) and to said third portion (39).

24. Cap means according to any one of claims 21 to 23, wherein said first portion (26), said second portion (33) and said third portion (39) are mutually connected together in such a way as to identify in said fin means (10) a step contour (45) suitable for engaging in a further step contour (46) defined by said first surface (25), by said second surface (27) and by said third surface (40).

25. Cap means according to claim 24, wherein said contour (45) and said further contour (46) can be associated in a shapingly coupled manner.

26. Cap means according to any one of claims 21 to 25, wherein said fin means (10) has a thickness that is less than the difference between the diameter (D) of said first collar means (22) and the diameter (d) of said neck (8).

27. Cap means according to any one of claims 21 to 26, wherein said fin means (10) is of a height (h; h1) that is less than the distance between said first collar means (22) and a shaped part (35; 44) of said container means extending radially from said neck (8).

28. Cap means according to any one of claims 21 to 27, wherein said opening-indicator means comprises a ring (5) having

an intended separation line means extending longitudinally along the surface of said ring (5).

29. Cap means according to any one of claims 21 to 28, and further comprising threaded means (6) suitable for engaging in further threaded means (7) obtained in container means (9) with which said cap means (1) can be associated.

30. Cap means according to claim 29, wherein said threaded means comprises a thread (6) having double-start (30, 31).

31. Cap means according to claim 30, wherein said double starts (30, 31) are contained on the same plane that is substantially parallel to a further plane identified by an opening (32) of said cap means (1).

32. Cap means according to claim 30, or 31, wherein said double starts (30, 31) are mutually staggered by an angle of 180°.

33. Cap means according to any one of claims 30 to 32, wherein said thread (6) comprises a pair of threads (28, 29) with cylindrical helix extending parallel to one another.

34. Cap means according to claim 33, wherein said cylindrical helix has a pitch of 4.5 millimetres.

35. Cap means according to any one of claims 30 to 32, wherein said thread (6) comprises a pair of threads (28, 29) with tapered helix extending parallel to one another.

36. Cap means according to claim 35, wherein said tapered helix has a pitch of 4.5 millimetres.

37. Container means, comprising a neck (8), wherefrom first collar means (22) and a second collar means (23) lead radially away, and cap means (1) provided with opening-indicator means (5) that has an outer edge (11) wherefrom leads away fin means (10) which in use extends towards the inside of said cap means (1), characterised in that said fin means (10) comprises a first portion (26) suitable for interacting with a surface (25) of said first collar means

(22), a second portion (33) suitable for interacting with a further surface (27) of said second collar means (23), and a third portion (39) suitable for interacting with a yet further surface (40) of said first collar means (22).

- 5 38. Container means according to claim 37, wherein said first portion (26) is arranged transversely in relation to said second portion (33) and to said third portion (39).
39. Container means according to claim 37, or 38, wherein said first portion (26) is arranged substantially perpendicularly in relation to said second portion (33) and to said third portion (39).
- 10 40. Container means according to any one of claims 37 to 39, wherein said first portion (26), said second portion (33) and said third portion (39) are connected together in such a way as to identify in said fin means (10) a step contour (45) suitable for engaging in a further step contour (46) defined by said first surface (25), by said second surface (27) and by said third surface (40).
- 15 41. Container means according to claim 40, wherein said contour (45) and said further contour (46) can be associated in a shapingly coupled manner.
- 20 42. Container means according to any one of claims 37 to 41, wherein said fin means (10) has a thickness that is less than the difference between the diameter (D) of said first collar means (22) and the diameter (d) of said neck (8).
- 25 43. Container means according to any one of claims 37 to 42, wherein said fin means (10) has a height (h; h1) less than the distance between said first collar means (22) and a shaped part (35; 44) of said container means (9) extending radially from said neck (8).
- 30 44. Container means according to any one of claims 37 to 43, wherein said first collar means (22) is adjacent to said second collar means (23).

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45. Container means according to any one of claims 37 to 44, wherein said second collar means (23) has a diameter that is greater than said first collar means (22).

46. Container means according to any one of claims 37 to 45, wherein said first collar means (22) is more distant from an opening zone (24) of said neck (8) than from said second collar means (23).

47. Container means according to any one of claims 37 to 46, wherein said surface (25) is arranged substantially parallel to said neck (8).

48. Container means according to any one of claims 37 to 47, wherein said further surface (27) is substantially annularly shaped.

49. Container means according to any one of claims 37 to 48, wherein said yet further surface (40) is substantially annularly shaped.

50. Container means according to any one of claims 37 to 49, wherein said surface (25) is tilted in relation to said further surface (27) and to said yet further surface (40).

51. Container means according to any one of claims 37 to 50, wherein said surface (25) is arranged in a substantially perpendicular manner in relation to said further surface (27) and to said yet further surface (40).

52. Container means according to any one of claims 37 to 51, wherein said opening-indicator means comprises a ring (5) provided with an intended separation line means extending longitudinally along the surface of said ring (5).

53. Container means according to any one of claims 37 to 52, wherein said cap means (1) further comprises threaded means (6) suitable for engaging in further threaded means (7) obtained in said neck (8).

54. Container means according to claim 53, wherein said threaded means comprises a thread (6) provided with double start (30, 31).

55. Container means according to claim 54, wherein said double starts (30, 31) are contained on the same plane that is substantially parallel to a further plane identified by an opening (32) of said cap means (1).

5 56. Container means according to claim 54, or 55, wherein said double starts (30, 31) are mutually staggered by an angle of 180°.

57. Container means according to any one of claims 54 to 56, wherein said thread (6) comprises a pair of threads (28, 29) with cylindrical helix extending parallel to one another.

58. Container means according to claim 57, wherein said cylindrical helix has a pitch of 4.5 millimetres.

59. Container means according to any one of claims 54 to 56, wherein said thread (6) comprises a pair of threads (28, 29) with tapered helix extending parallel to one another.

60. Container means according to claim 59, wherein said tapered helix has a pitch of 4.5 millimetres.

61. Cap means, comprising threaded means (6) suitable for engaging in further threaded means (7) obtained in container means (9) with which said cap means (1) can be associated, characterised in that said threaded means comprises a thread (6) provided with double tart (30, 31).

62. Cap means according to claim 61, wherein said double starts (30, 31) are contained on the same plane that is substantially parallel to a further plane identified by an opening (32) of said cap means (1).

63. Cap means according to claim 61, or 62, wherein said double starts (30, 31) are mutually staggered by an angle of 180°.

64. Cap means according to any one of claims 61 to 63, wherein said thread (6) comprises a pair of threads (28, 29) with cylindrical helix extending parallel to one another.

65. Cap means according to claim 64, wherein said cylindrical helix has a pitch of 4.5 millimetres.

66. Cap means according to any one of the claims 61 to 63, wherein said thread (6) comprises a pair of threads (28, 29) with tapered helix extending parallel to one another.

67. Cap means according to claim 66, wherein said tapered helix has a pitch of 4.5 millimetres.

68. Cap means according to any one of claims 61 to 67, wherein said opening-indicator means (5) has an intended separation line means extending longitudinally along the surface of said opening-indicator means (5).



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